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## **Free polynomial Biholomorphisms between free spectrahedra**

### **Abstract**

Linear Matrix Inequality (LMI) Domains are bounded free convex semialgebraic sets. Along with their commutative counterparts, they appear in a host of fields including convex optimization, semidefinite programming, convex real algebraic geometry and systems theory. We consider free polynomial mappings between LMI Domains, polynomial equivalence versus affine linear equivalence, and automorphisms for certain classes of domains. We produce a class of pairs of LMI domains that are polynomially, but not affine linearly, biholomorphic.

Talk time: 07/18/2016 6:30PM— 07/18/2016 6:50PM

Talk location: Crow 206

Special Session: Multivariable operator theory. Organized by H. Woerdeman.